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Renewable energy's future takes root in N.C. companies

State cultivates industry, promotes use with law

By Bruce Henderson
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The ethereal orange glow of plasma, captured inside a westside industrial park, casts new light on the energy future of Charlotte, N.C.

The startup company Sencera uses the electrically charged gas to make solar panels. It's among the renewable-energy firms reaching for a toehold in a region dominated by coal and nuclear power.

Economic developers, sniffing new business, say Sencera's 15 employees could be among the first of thousands of such jobs in the region. Those workers, they say, could not only generate electricity from the sun, wind and plants but make parts for the machinery of a growing industry.

Even as North Carolina's wind power waits to be commercially harnessed, said University of North Carolina at Greensboro geographer Keith Debbage, "we can be a key supplier to wind energy anywhere in the world."

A PPG Industries fiberglass plant in Shelby proves his point. The plant staved off what its manager called a "near-death experience," and created 50 new jobs, by shifting to a product used in wind turbine blades.

Debbage recently identified 519 manufacturers in the Charlotte region that could supply components for wind, solar, biomass and geothermal companies.

"It's not a fantasy," he said. "It's a matter of how big a potential market there is and how quickly it can happen."

Only 24 to 32 renewable-energy companies, depending on who's counting, now operate in the region. The State Energy Office lists more than 100 renewable-energy manufacturers in North Carolina this year, up from 28 in 2005.

Charlotte's energy sector is on a hiring spree, but most of it is focused on new nuclear power plants.

Still, global investment is flowing into renewables as technology improves, prices for coal and natural gas grow, and governments demand cleaner alternatives to fossil fuels.

A major catalyst in North Carolina is a state law, passed last year, that will force utilities to make 12.5 percent of their electricity from renewable sources and energy efficiency by 2021. The state also offers renewable-energy tax credits and created a nonprofit agency, NC GreenPower, to promote alternative energy.

"We think it's fantastic what North Carolina has done for solar energy," said Sencera Chief Executive Rusty Jewett.

In choosing to invest \$36.8 million in a Charlotte factory, he said, Sencera passed up possible locations in Canada, Germany and Dubai.

Building leases are cheap here, salaries smaller and workers more likely to stay with their

companies, Jewett said. Three glass makers operate within 50 miles, providing a local supply of a heavy material used in making solar panels. The state and city offered performance-based incentives.

The 5-year-old company will make thin-film modules, or panels, which can be produced more quickly and cheaply than those that now dominate the market. It plans to start production next spring, hiring about 65 more workers.

Engineer Matt Jaskot, fresh out of the University of Delaware, refines the recipe of temperatures, pressures and gas flow rates that Sencera will use to turn out 330,000 modules a year. At 22, he's earning \$54,000 a year.

"I was interested in alternative energy because I felt like it was going to be a field that was going to open up a lot of new jobs, and I felt like there were a lot of interesting problems that needed to be solved," Jaskot said. "It's the kind of thing that if we do it well, it could really take off."

Practical problems remain. Solar power is still expensive compared to coal and gas, although prices are falling. The off-and-on nature of wind power is hard to tie into a power grid that continually balances supply and demand.

And an aging work force means nearly half the energy industry's engineers could retire by 2012.

"I'm much more worried about the supply side than I am about the demand side," said Steve Patterson, director of UNC Charlotte's new Energy Production and Infrastructure Center. EPIC was created to crank out engineers for the industry.

Fueling much of the demand is an expected surge in new nuclear reactors. Duke Energy, Raleigh, N.C.-based Progress Energy and S.C. Electric & Gas plan to build six new nuclear reactors in the Carolinas. Engineering, design and construction companies are flocking to the region.

Despite the surge in conventional energy, the Charlotte Regional Partnership, a 16-county economic-development agency, thinks renewable energy is a good fit with its manufacturing, distribution and technology base. Recent business forums on the subject have been filled.

"We're trying to get smart about these industries, and it's a moving target," said Kenny McDonald, the partnership's executive vice president. "We're also getting smart about what do we have and how does it align with what companies are looking for."

Charlotte's low costs, international airport and growing population lures fresh talent to the region, he said. Its wealth of business connections create contacts for sellers and customers. And North Carolina's renewable-energy tax credits, the first in the Southeast, gave the state a welcoming image.